

Order of operations with exponents

Follow BEDMAS: brackets, exponents, divide and multiply, then add and subtract.

1 Study the model.

BEDMAS: the order of operations

- B** Brackets
E Exponents
DM Divide and multiply, left to right
AS Add and subtract, left to right

3^2 means $3 \times 3 = 9$, not 3×2 .

Worked example

$$2 + 3^2 \times (8 - 6)$$

$$\textcircled{1} = 2 + 3^2 \times 2$$

$$\textcircled{2} = 2 + 9 \times 2$$

$$\textcircled{3} = 2 + 18$$

$$\textcircled{4} = 20$$

Brackets
 Exponents
 Multiply
 Add

2 Evaluate. Show each step on the line.

- | | | | |
|--------------------------|------------------------|--------------------------|------------------------|
| 1. $4^2 - 6$ | = <input type="text"/> | 2. $2^3 + 5 \times 2$ | = <input type="text"/> |
| 3. $(3 + 2)^2$ | = <input type="text"/> | 4. 3×2^3 | = <input type="text"/> |
| 5. $10^2 \div 4 + 1$ | = <input type="text"/> | 6. $(9 - 5)^2 \div 2$ | = <input type="text"/> |
| 7. $5^2 - 3^2$ | = <input type="text"/> | 8. $2 \times (4^2 - 10)$ | = <input type="text"/> |
| 9. $6^2 \div (2 + 1)^2$ | = <input type="text"/> | 10. $7 + 3^3 \div 9$ | = <input type="text"/> |
| 11. $100 - 4 \times 3^2$ | = <input type="text"/> | 12. $(6 - 4)^3 + 1^5$ | = <input type="text"/> |

3 Solve the building block problems. Use exponents.

13. Amaru builds a cube 4 blocks long, 4 blocks wide and 4 blocks tall. How many blocks does he use?

Expression _____ Answer blocks

14. Mei builds 3 cubes with 2 blocks on each side and a flat 5 by 5 square. How many blocks is that?

Expression _____ Answer blocks